

REMARKS

Claims 1-2, 4-24, 36-37 and 38-55 are pending in the application. Claims 1-2, 4-23 and 36-37 have been rejected. Claims 1, 9, 16, 22 and 38 are independent claims. Claims 1, 9, 16 and 22 have been amended. Claims 4, 5, 15, 36 and 37 have been canceled. Claims 38-55 are new. No new matter has been added by these amendments. It is believed that the remarks presented herein below address each of the Examiner's rejections and objections of the claims.

Claim Rejection – 35 U.S.C. §102(b)

Claim 37 was rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application 2002/0114101 to Guzik et al., hereinafter "Guzik." As claim 37 has been canceled, the rejection is moot.

Claim Rejection – 35 U.S.C. §103(a)

Claims 1-2, 4-23 and 36 are rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent Application 2002/0122373 to Marshall, hereinafter "Marshall," in view of Gusik. Applicant respectfully disagrees and traverses this rejection.

Respectfully it is noted that claims 2, 4, 5, 11, 15 and 36 have been canceled, the issue of there rejection therefore being moot. The following discussion is therefore directed to the remaining claims and new claims 38-55.

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007):

"Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." Quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

As set forth in MPEP 2143.03, to ascertain the differences between the prior art and the claims at issue, "[a]ll claim limitations must be considered" because "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385. According to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, Federal Register, Vol. 72, No. 195, 57526, 57529 (October 10, 2007), once the aforementioned *Graham* factual

inquiries are resolved, there must be a determination of whether the claimed invention would have been obvious to one of ordinary skill in the art based on any one of the following proper rationales:

- (A) Combining prior art elements according to known methods to yield predictable results;
- (B) Simple substitution of one known element for another to obtain predictable results;
- (C) Use of known technique to improve similar devices (methods, or products) in the same way;
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (E) "Obvious to try"—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;
- (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S., 82 USPQ2d 1385 (2007).

In accordance with the above provisions, a review of Marshall and Guzik is therefore in order. Marshall discloses an ultra-high density storage device with resonant scanning micromover. More specifically, Marshall discloses system and method for using periodic trajectory to guide the movement of read/write emitters **102, 104** over a data storage medium. These periodic trajectories trace out a curved path and may be referred to as "Lissajous" figures. See for example ¶¶66-67 and FIGs. 4-14.

Marshall does not disclose servo tracks, e.g. first information, that are separate from data tracks, e.g. second information. Marshall does not teach first information, e.g., servo bits that are established adjacent to the servo tracks and read to provide signals with amplitude which may be evaluated to determine alignment of the read/write mechanism. Indeed, as Marshall discloses varying options for developing Lissajous figures to describe the relative motion between the read/write mechanisms and the data areas of the medium, the servo tracks representing the first information and linear motion as set forth in the present application would frustrate the intentions of Marshall.

Guzik discloses multi-frequency servo bursts in a magnetic disc memory system. More specifically, Guzik teaches a disc based memory system which requires the data tracks to be concentric, and of varying lengths – indeed, no two tracks can be the same length for such a condition would superimpose one track upon another.

To provide alignment of the read/write head **60** to a particular data track **50** upon the medium **30**, Guzik discloses multiple servo bursts **300** distributed among several adjacent track segments **100**, see FIG. 9, ¶60-62.

Clearly, Guzik discloses that the tracking information, e.g. first information is dispersed within the same area as user data, e.g. the second information. The tracking information is not provided in a separate area of the media that is separated from the user data area (e.g., a cluster for servo data and clusters for user data) – rather the servo tracking information and user data are interposed with one another, see FIG. 9.

Applicant has amended the present independent claims so as to help clarify the distinct elements of the present invention. Indeed claim 1 now recites:

1. A semiconductor memory comprising:
 - a controller;
 - a media including at least one area, each area providing at least one **first group of parallel servo tracks having first information**, and at least one group of data tracks parallel to and separated apart from the servo tracks;
 - for each area;
 - at least one first read/write mechanism adjacent to the first group of parallel servo tracks, each first read/write mechanism including an electron field emitter configured to read the first information;
 - at least one second read/write mechanism adjacent to the data track, each first read/write mechanism including an electron field emitter;
 - flexures configured to provide relative motion between the each area and the first and second read/write mechanisms adjacent to each area;
 - wherein for each area, the controller is configured to receive a first signal generated in response to the first information being read, and wherein the controller is configured to generate a second signal provided to the flexures to cause a position of the media to be adjusted relative to the first read/write mechanism electron emitter.**

Claim 9 has also been amended to further clarify the method of reading information from such a semiconductor memory device. Moreover, claim 9 now recites:

9. A method of reading information from a semiconductor storage device having at least one area, each area providing at least one first group of parallel servo tracks having first information and at least one group of data tracks parallel to and separated from the servo tracks, at least one first read/write mechanism adjacent to the first group of servo tracks and at least one second read/write device adjacent to the data tracks, and at least one mover configured to provide relative motion between each area and the first and second read/write mechanisms of each area, the method comprising:
 - reading first information from the first group of parallel servo tracks;
 - generating a first signal in response to the first information as read; and
 - comparing the amplitudes of signals detected from said first information stored in a first region adjacent to a servo track to

signals detected from first information stored in a second region adjacent to the servo track to generate a second signal using the first signal, the second signal configured to cause second information to be read from at least one data track during a first time period.

With respect to Independent claim 16, it is noted that claim 16 is presented in "means for" terminology. As per MPEP 2106, "[w]here means plus function language is used to define the characteristics of a machine or manufacture invention, such language must be interpreted to read on only the structures or materials disclosed in the specification and "equivalents thereof" that correspond to the recited function."

16. A storage device comprising:
a media that includes at least one area providing a **first cluster and separate therefrom within the same area a second cluster, the first cluster including first information;**
first means for generating timing information in response to reading the first information, said first means including means for comparing the amplitudes of signals detected from said first information stored in a first region on said media to signals detected from said first information stored in a second region on said media; and
second means for writing second information in the second cluster using the timing information.

Claim 22 presents the data storage device yet again, reciting:

22. A storage device comprising:
a media including **servo information provided in a first area separate and apart from at least one data storage area, said servo information including timing information;**
a field emitter associated with the media, configured to read the servo information;
a controller configured to receive a first signal generated in response to the servo information being read, the controller being configured to generate a second signal, said controller including an amplitude comparator for comparing the amplitudes of signals detected from said timing information stored in a first region on said media to signals detected from said timing information in a second region on said media and
a flexure configured to adjust the position of the media relative to field emitter in response to the second signal.

Claim 38 presents yet another variation of the present invention:

38. A semiconductor memory comprising:
a **data storage media having a first group of parallel servo tracks having aligned first and second ends, the tracks having first information adjacent to the tracks and established in a predetermined pattern, the group of servo tracks separate from a group of data tracks;**
at least one first read/write mechanism adjacent to the first group of parallel servo tracks, each first read/write mechanism including an electron field emitter configured to read the first information;

flexures configured to provide relative motion between the first read/write mechanism and the first group of parallel servo tracks;
a controller operable to receive a first signal generated in response to the first information being read and generate a second signal provided to the flexures to cause a position of the media to be adjusted relative to the first read/write mechanism electron emitter.

In light of the above summary of Marshall and Guzik, it is respectfully submitted that the Examiner has failed to resolve the *Graham* factual inquiries by failing to properly ascertain the actual differences between the prior art references of Marshall and Guzik for at least the following reasons:

- 1 – Marshall does not disclose servo tracks.
- 2 – In Marshall the servo tracks which are not disclosed are further not disclosed to provide first information (e.g., tracking information) provided in a first group that is separate and apart from at least one group of data tracks that are parallel to the servo tracks.
- 3 – Guzik does not disclose parallel servo tracks having first information (e.g., tracking information) provided in a first group that is separate and apart from at least one group of data tracks that are parallel to the servo tracks.
- 4 – Guzik discloses concentric tracks as opposed to parallel tracks with aligned ends.

As the *Graham* factual inquire is not properly resolved, application of any of the rationales (A)-(G) as set forth in the guidelines is futile for Marshall and Guzik alone or in combination utterly fail to provide all of the claim elements as set forth in claims 1, 9, 16, 22 or 38.

Indeed according to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, *Id.*, to reject a claim based on combining the prior art elements according to known methods to yield predictable results, rational (A), the Examiner must articulate:

- (1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference;
- (2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely would have performed the same function as it did separately;
- (3) a finding that one of ordinary skill in the art would have recognized that the results of the combination were predictable; and

- (4) whatever additional findings based on the Graham factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

With respect to present office action and the Examiner's position of obviousness, clearly item (1) has not been met as the prior art references of Marshall and Guzik do not include each and every element claimed. With respect to item (2) as Marshall and Guzik lack the complete set of claim elements, there can be no finding that one of ordinary skill in the art would could have combined the elements by known methods for any combination would not result in the complete invention as claimed. With respect to item (3) as the combination would be incomplete there could be no recognition of predictable results, and with respect to item (4) the Examiner has offered no rational basis for how and why the incomplete combination of elements from Marshall and Guzik would spontaneously result in the presently claimed invention. "If any of these findings cannot be made, then this rational cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art." Id.

To assert that the differences are simply resolved by an obvious to try approach is absurd. Four key and distinct differences are noted above which can not be simply waved aside with an obvious to try presumption. The differences presented are well beyond a reasonable number of permutations and would require significant change, and in fact departure from, the teachings of Marshall and Guzik to result in claimed embodiments.

As such, there is no proper rational for the combination where such a combination fails to address all of the claim limitations. For at least these reasons, withdrawal of the rejection and allowance of these claims is respectfully requested.

Claims 2, 6-8 and 48-53 depend directly or indirectly from independent claim 1. Claims 10, 12-14 and 54-55 depend directly or indirectly from independent claim 9. Claims 17-21 depend directly or indirectly from independent claim 16. Claim 23 depends from claim 22. Claims 39-47 depend directly or indirectly from independent claim 38. Applying additional limitations to their respective base claims, these dependent claims do not in any way spontaneously resolve the factual incongruity of Marshall and Guzik to provide all of the claim elements presented in independent claims 1, 9, 16, 22 and 38 let alone the additional elements provided by the respective dependent claims. Moreover, these claims enjoy the same lack of obvious as stated above, and incorporated herein by reference.

Further these claims provide additional limitations which are not disclosed in the Marshall or Guzik references. For example claims 39, 49 and 54 describe the make up of the servo tracks as providing preamble areas respectively at each respective end and a track region therebetween. Claim 40, 50 and 54 describe interleaved first and second regions in the

preamble areas providing first information perpendicularly aligned on both sides of a track in the first region and omitted from both sides of the track in the second region. Claims 41, 51 and 54 describe interleaved first and second regions in the track region, first information provided in alternating regions and opposing alignment transverse to each track.

Moreover, it is respectfully asserted that claims that there was never a proper rational for the combination of Marshall and Guzik, and that the above provided claim amendments and discussion serve well to illustrate failings of Marshall and Guzik to combine in any way so as to disclose all of the claimed elements set forth in the currently amended claim set.

Accordingly, withdrawal and allowance of claims 2, 6-8, 10, 12-14, 17-21, 23, and 39-55 is respectfully requested.

CONCLUSION

In view of the above Amendments and Remarks, Applicant has addressed all issues raised in the Final Office Action dated January 10, 2008, and respectfully solicits a Notice of Allowance for claims 1, 2, 6-10, 12-14, 16-23 and 38-55. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

As the highest number of claims previously paid for was 36, with 7 independent claims, and the present amendment provides a total of 36 claims with 5 independent claims, it is believed that no fees are due for the present amendments. A fee for an extension of one month is provided. However, should any fee be deemed necessary in connection with this Amendment and Response, the Commissioner is authorized to charge deposit account 08-2025, referencing the Attorney Docket Number 10016512-1.

Respectfully submitted,

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